

Claims

1. A printing unit, wherein at least one cylinder (01) or a roller is seated in a frame element (15, 104, 107), which is movable by means of rollers (07), characterized in that the rollers (07) can be shifted between an extended position, in which they support the movable frame element (15, 104, 107), and a retracted position, in which the weight of the movable frame element (15, 104, 107) is supported at least in part on a stationary support (06) by means of a contact surface which is different from the rollers (07).

2. A printing unit, wherein at least one cylinder (01) or a roller is seated in a frame element (15, 104, 107), which is movable by means of rollers (07), and these rollers (07) displace the frame element (15, 104, 107) on rails (05), characterized in that the rollers (07) have an extended and a retracted position.

3. The printing unit in accordance with claim 2, characterized in that the rails (05) are stationary.

4. The printing unit in accordance with claim 2, characterized in that in the retracted position of the rollers (07) the rails (05) support the movable frame element (15, 104, 107) at least in part.

5. The printing unit in accordance with claim 2, characterized in that the rails (05) are a part of a support (06).

6. The printing unit in accordance with claim 1 or 2, characterized in that the movable frame element (15, 104, 107) can be moved at right angles to the axis of rotation of the cylinder (01) or the roller.

7. The printing unit in accordance with claim 1 or 2, characterized in that the movable frame element (15, 104, 107) can be moved horizontally.

8. The printing unit in accordance with claim 1 or 2, characterized in that the printing unit has one or several printing groups, each of which has a pair of cylinders (01) delimiting a printing gap, wherein the respectively first cylinder (01) of each pair is seated in a stationary frame element (13), and the second cylinder (01) of each pair in a frame element (15), which is movable by means of rollers (07) and can be placed at a distance from the stationary frame element (13).

9. The printing unit in accordance with claim 8, characterized in that each frame element (13, 15, 104, 106, 107) has at least one rubber blanket cylinder (01) as the cylinder (01) delimiting the printing gap, a forme cylinder and an inking system.

10. The printing unit in accordance with claim 1 or 2, characterized in that the printing unit contains three frame elements (104, 106, 107), wherein one frame element (106) receives the forme cylinders and rubber blanket cylinders, and inking systems assigned to the respective forme cylinders are arranged in the other two frame elements (104, 107).

11. The printing unit in accordance with claim 1, characterized in that the support (06) is constituted by stationary rails (05), on which the rollers (07) rest in the extended state.

12. The printing unit in accordance with claim 1, characterized in that the rails (05) are made of non-hardened steel.

13. The printing unit in accordance with claim 2 or 11, characterized in that the pivot shafts (14) of the rollers (07) are each maintained pivotable around an eccentric shaft (16) on the movable frame element (15, 104, 107).

14. The printing unit in accordance with claim 13, characterized in that by means of at least one pneumatic or hydraulic actuating member (21) for driving a pivot movement, at least one of the rollers (07) is arranged around its eccentric shaft (16).

15. The printing unit in accordance with claim 13 or 14, characterized in that respectively two rollers (07),

which can be pivoted around a common eccentric shaft (16), are arranged on a common torsion-proof shaft (36, 44).

16. The printing unit in accordance with claim 13, characterized in that the movable frame element (15, 104, 107) has two lateral frame plates (03, 101, 103), and that of two rollers (07), which can be pivoted around a common eccentric shaft (16), one supports the respectively first, and the other the second lateral frame plate (03, 101, 103).

17. The printing unit in accordance with claim 1 or 13, characterized in that the printing group has at least two shafts (36, 44), which support rollers (07) and are pivotably coupled by means of a rod (22), which acts on the shafts (36, 44) via lever arms (18, 23, 43).

18. The printing unit in accordance with claim 1 or 2, characterized in that a protrusion (82), which is oriented in the movement direction of the movable frame element (15, 104, 107), is formed on one of the movable frame elements (13, 15, 104, 106, 107), and a cutout (79), which is shaped to complement the protrusion (82), is formed on the other frame element (13, 106), which engage each other in a positively connected manner when the frame elements (13, 15, 104, 106, 107) are arranged without spacing.

19. The printing unit in accordance with claim 18, characterized in that the protrusion (82) tapers in the direction toward a free end and/or the cutout (79) tapers in the direction toward a floor.

20. The printing unit in accordance with claim 18 or 19, characterized in that the protrusion (82) is a vertical rib (82) and the cutout (79) a vertical groove (79).

21. The printing unit in accordance with claims 18 to 20, characterized in that the protrusion (82) and/or the cutout (79) are exchangeably mounted on their respective frame elements (13, 15, 104, 106, 107).

22. The printing unit in accordance with claim 1 or 2, characterized in that an upright guide rail (47) extending in the movement direction and fixedly connected with the frame element (15, 104, 107) is enclosed on two sides by a track guidance device, which is fixedly connected with the other frame element (13, 106).

23. The printing unit in accordance with claim 22, characterized in that track guidance device has at least one pair of guide rollers (49), which roll off on the two sides of the guide rail (47).

24. The printing unit in accordance with claim 1, 2, 8 or 10, characterized in that, when in an extended position, the printing unit is in a maintenance position.

25. A printing unit, wherein at least one cylinder (01) or a roller is seated in a frame element (15, 104, 107), which is movable in relation to another frame element (13, 16), characterized in that a toothed rack (57) extending in the movement direction of the movable frame element (15, 104,

107) is fixedly connected with one of the frame elements (13, 15, 104, 106, 107), and a self-locking drive mechanism (54, 53, 56), which engages the toothed rack (57) for moving the movable frame element (15, 104, 107) and can be retracted from the toothed rack (57), is arranged on the other frame element (13, 15, 104, 106, 107).

26. The printing unit in accordance with claim 25, characterized in that the printing unit for recto- and verso-printing with one or several printing groups, each of which has a pair of cylinders (01) delimiting a printing gap, wherein the respectively first cylinder (01) of each pair is seated in a frame element (13) fixed on the frame, and the second cylinder (01) of each pair is seated in a frame element which can be moved by means of rollers (07), which can be spaced apart from the frame element (13) fixed on the frame.

27. The printing unit in accordance with claim 25, characterized in that the printing unit receives three frame elements (104, 106, 107), wherein one frame element (106) receives the forme cylinders and rubber blanket cylinders, and inking systems assigned to the respective forme cylinders are respectively arranged in the other two frame elements (104, 107).

28. The printing unit in accordance with claim 25, characterized in that the self-locking drive mechanism is comprised of a worm gear (63, 64).

29. The printing unit in accordance with claim 25, characterized in that, for retracting, the drive mechanism (54, 53, 56) can be pivoted out of the toothed rack (57).

30. A method for moving a frame element (15, 104, 107) of a printing group, wherein initially the frame element (15, 104, 107) is vertically lifted, and is then horizontally displaced on the rails (05), characterized in that thereafter the frame element (15, 104, 107) is vertically lowered onto the rails (05) so that the frame element (15, 104, 107) rests on the rails (05).